MONITORING SYSTEM FOR DIGEBI BILINGUAL INTERCULTURAL EDUCATION

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Introduction

The *Dirección General de Educación Bilingüe Intercultural* (DIGEBI) has the objective of developing the dual language abilities of boys and girls who enter formal school with limited exposure to more than one language. Further, DIGEBI looks to develop the cognitive potential of students through activities and interactions that allow participation with, reflection on, and critical thinking about the subject matter. Thus, the products of the DIGEBI's work are changes in schools and classrooms that result in individual students having greater interpersonal and academic success in primary school.

This document describes a series of indicators and procedures for monitoring the actions of DIGEBI at the school and classroom level. The indicators and procedures have been developed through a collaborative effort between DIGEBI and MEDIR over a two-year period. The process began with reflection over what types of information are needed to make decisions about instructional delivery at the departmental and national levels, and how could such information be obtained in a parsimonious manner. Over time, indicators were developed for bilingual schools and classrooms and instruments tested and refined for collecting data on the indicators. Three departments successfully implemented the system in 2001 and it will be implanted in all departments where DIGEBI is working during the 2002 school year.

Monitoring

Monitoring is the systematic observation of conditions or function in relation to expected outcomes. Monitoring is usually part of a formative evaluation process that provides information to program staff to make the program run smoothly. To improve a program, it is necessary to understand how well a program is moving toward its objectives so that changes can be made in the program components or processes, as necessary. Formative evaluation/monitoring requires becoming familiar with multiple aspects of a program and providing program personnel with information and insights to help them improve it. This differs from evaluation, which is generally considered careful appraisal or study to determine the value or worth of programmatic inputs.

Indicators

An indicator is a criterion for gauging the status of certain phenomena. An indicator should not be stated in terms of directionality. Good indicators share several characteristics. First, they can be measured. A measure is the unit of valuation for making a judgment about the directionality of an indicator. Second the unit of measurement is observable and verifiable. This means that it has existence in time and space, which permits observation, and that the phenomena observed can be verified, generally either through multiple instruments or multiple observations. Third, an indicator should be relevant. In the context of monitoring educational processes, this means that the indicator

should be closely related to the objectives the program is attempting to achieve. Usually there are three related sets of objectives: those related to inputs; those related to processes; and those related to impact. An ideal monitoring system will have indicators related to expected outcomes in each of these areas.

The indicators developed by DIGEBI are taken largely from existing literature on school/classroom effectiveness and on the growing body of international literature on classroom interaction, educational quality, and bilingual education (see attached bibliography for examples). Three levels of indicators were used. The first relates to student participation in terms of attendance, persistence in school and utilization of instructional materials. The second consists of teacher performance that is generally associated with greater quality in terms of students' interpersonal and academic performance. This includes background characteristics associated with better teaching in bilingual contexts such as language ability, having an official posting as a bilingual teacher and commitment to teaching in the form of attendance, as well as mastery of the DIGEBI instructional approach. Mastery includes: using the specific curricular components of DIGEBI, using the mother tongue as the language of instruction, as appropriate; and providing students with a variety of learning contexts in which to interact with academic content. Third, are indicators of system support or enabling factors. In the case of DIGEBI, this is principally related to the instructional time provided by the school and the availability of materials in the mother tongue that allow students interact with the subject matter in a language that they can understand.

Table 1: Student Participation

A key objective of DIGEBI efforts is to make schooling relevant to students. Presenting subject matter that builds on children's experience in a language they can understand will give students an opportunity to participate in the classroom and thereby increase interest in attending and remaining in school. The indicators used to monitor school participation are:

1. Attendance
2. Drop-out
3. Use of Materials
4. Participation

Indicator	Measure/Report	Instrument	Frequency of Use
Attendance	Percent - Number of students attending class on a given day, divided by the number of students enrolled in sample schools, disaggregated by gender and school type.	School Observation Guide	Bi-monthly
Drop-out	Percent- Number of students leaving school between observation periods divided by the number of students enrolled, disaggregated by gender and school type	School Observation Guide	Bi-monthly
Use of Materials	a -Number of observed children using texts divided by all observed children	Student Observation form (Use of Texts and Books)	Bi-monthly
	b –Number of children using texts to engage with subject matter divided by all children observed using texts	Student Observation Form (Use of Texts and Books)	Bi-monthly
Classroom Participation	Percentage of student-initiated interactions over the expected frequency (50%) of such interactions in interchanges between students and teachers.	Teacher Observation Guide	Bi monthly

Table 2: Teacher Performance – Background Characteristics

Obviously the ability to implement a bilingual program rests in the language abilities of the teachers. Closely associated with language ability is an acceptance of the value of bilingual intercultural education. Acceptance of the value is shown both in holding a posting as a bilingual teacher and the commitment to students in bilingual intercultural contexts. Thus the e indicators used to monitor background characteristics are:

1. Oral Language Ability

2. Bilingual Posting

3. Attendance

Indicator	Measure/Report	Instrument	Frequency of Use
Oral Language Ability	Percent - Number of teachers that state they can speak a mayan language divided by the number of teachers in the sample, disaggregated by gender and school type.	Teacher Observation Guide	Annually
Bilingual Posting	Percent- Number of teachers that state they have a bilingual posting divided by the number of teachers in the sample, disaggregated by gender and school type	School Observation Guide	Annually
Attendance	Percent - Number of teachers present at the time of the school visit divided by all teachers in a school, disaggregated by gender and type of school	School Observation Guide	Bi-monthly

Table 3: Teacher Performance – Classroom Instruction/Mastery

Mastery of the DIGEBI curriculum relates to the ability to manipulate the core subjects of the bilingual intercultural program appropriately. This means that these subjects of Mother Tongue Acquisition, Mayan Mathematics, Mayan Culture and Spanish as a Second Language should be taught regularly and balanced with the other elements of the curriculum. As DIGEBI follows an approach that all students can learn a focus is on helping students understand the content and the language of instruction should be consistent with the linguistic abilities of the students. Similarly content should be presented in a manner that is consistent with the knowledge, interests and abilities of the students, and allow students to apply their knowledge and not merely memorize facts. The indicators used to monitor teacher mastery of the DIGEBI program are:

1. Presentation of Core Bilingual Intercultural Subjects

2. Use of Two Languages

3. Teaching-Learning Processes

Indicator	Measure/Report	Instrument	Frequency of Use
Presentation of Core Bilingual Intercultural Subjects	Percent - Number of observations of each of the four core subjects divide by all observations of subjects, disaggregated by subject and type of school.	Teacher Observation Guide	Bi-monthly
Use of Two Languages a-Use as Language of instruction b –Use as language of classroom	a –Percent Number of observations of mother tongue use in instructional situations divided by all observations of language use in instructional situations b – Percent Number of observations of mother tongue use in non-instructional situations divided by all observations of language use in non-instructional situations	Teacher Observation Guide Teacher Observation Guide	Bi-monthly Bimonthly
Teaching-Learning Processes	a -Percent. Number contexts used divided by total number of contexts disaggregated by context. b- Percent. Number of instructional techniques observed divided by all instructional technique, disaggregated by individual instructional technique	Teacher Observation Guide Teacher Observation Guide	Bi-monthly Bi-monthly

Table 4: System Support/Enabling Conditions

Instructional time has been shown to be an important element in student academic performance in bilingual and monolingual school contexts. The greater the amount of time that learners are exposed to subject matter the more opportunities exist for learning strategies that lead to mastery of the curriculum to take place. DIGEBI views completion of the daily school schedule as an important way to provide children the opportunity to learn. However, only being in school does not ensure that instruction is taking place, thus, the time dedicated to subject matter is a second important element. Further all children are not guaranteed access to the subject matter where instructional materials are not available. DIGEBI has developed a set of materials to accompany its core subjects and it is important to make sure these materials are available in sufficient supply to enrich the teaching and learning of the bilingual intercultural curriculum. In is also important to know what other materials are available. Indicators used to monitor system support are:

1. Duration of the School Day

2. Time Dedicated to Academic Classes

3. Availability of Bilingual Intercultural Education Materials

Indicator	Measure/Report	Instrument	Frequency of Use
Duration of the School Day	Mean (Maximum and Minimum). Sum of the total time of the school day in each sample school divided by the number of sample schools.	School Observation Guide	Bi-monthly
Time Dedicated to Academic Classes	Percent. Sum of total time spent in classes in each sample school divided by the total time of the school day in each school	School Observation Guide	Bi-monthly
Availability of Bilingual Intercultural Materials	a- Mean Number of texts of all types divided by the total number of students, disaggregated by grade. b- Percent - Number of BIE texts divided by number of all texts, disaggregated by grade	Materials Inventory	Bi-annually

Procedures

Purpose: To assist DIGEBI in making decisions at the departmental and national levels.

Objective: Provide systematic and routine information on the implementation of the Bilingual Intercultural Education in schools and classrooms.

Resources:

1.   Personnel: one person to lead the departmental data collection with a time dedication of 8 days a month for school visits and 3 days for data processing and preparation of a bi-monthly report

2.   Transportation: resources to allow the individual to reach the schools aat the appropriate time

3.   Observation instruments: the evaluation unit will provide the necessary copies of the instruments

Sample:

Eight schools in each department that have Bilingual Intercultural programs, distributed, to the extent possible, as follows:

1.   Two schools with BIE only in preprimary

2.   Two schools with BIE in preprimary and first grade

3.   Two schools with BIE in preprimary, first and second grades

4.   Two schools with BIE in preprimary through third grade

When it is not possible to achieve this sample distribution, schools will be chosen that have EBI programs and are willing to participate in the monitoring effort. All eight schools should be visited bi-monthly and there should be at least six visits in a school year. At the end of the year 48 visits to the schools in each department should have been made. It does not matter if the schools aaare the same for all visits. However, the distribution in the types of schools should be maintained if different schools arrre used.

Schedule of Visits:

Once a month in each school from 7:30 a.m. to 1:00 p.m. It is important to arrive at the school prior to the initiation of classes and remain in the school all day, until classes have been completed.

Schedule of Observations:

In the following table, the data that should be collected during a visit are described. Observations should be carried out in preprimary to third grade. Observations should be conducted in each grade, irrespective of whether the teachers have a bilingual posting and irrespective of whether they speak the local language.

In the observations of teachers and student a time sample should be used and an interval of 15-20 should be left between each observation.

Table 5: Schedule of Observations

Instrument	What to Observe	When to Use	Number
School Observation Guide	The school, by interviewing the director	From the beginning to the end of the class day	One (1) per school
Materials Inventory	Existence of Texts and Materials	Throughout the whole day	One (1) per school
Student Observation Form	One girl and one boy per grade, from pp to 3rd (8 students per school)	Three observations before recess and three after recess	Four (4) per school
Use of Texts	One girls and one boy in each grade from 1st to3rd (six students per school)	Three observations before recess and three observations after recess	Six (6) per school
Use of preprimary texts	One girl and one boy	Three observations before recess and three observations after recess	Two per school
Teacher Observation Guide	Each teacher from preprimary through 3rd grade	Three observations before recess and three observations after recess	Up to four (4) per school

At the end of each bi-monthly period of observation the following quantity of instruments should have been completed:

Table 6: Number of Instruments to Complete Each Period

Instruments	Number
School Observation Guide	Eight
Materials Inventory	Up to eight
Student Observation Form	Up to thirty-two (64 students), eight for each grade. Up to 24 if the school doesn't have preprimary
Use of Texts	Up to 24, one for each grade from 1st through 3rd
Use of preprimary Texts	Up to 8
Teacher Observation Guide	Up to four

Procedures for Completing the Instruments

Observation sequence: follow the following sequence:

1.   In the school:

   a.   School Observation Guide: All Day

   b.   Inventory of Materials: at the start of the day, during the day, between classroom observations, during recess, and at the end of classes

2.   In the classroom:

   a.   Teacher Observation Guide: during periods of classes, if classes aare suspended, indicate this on the lower part of the Guide, DO NOT complete the Student Observation form or the Use of texts

   b.   Student Observation Form: One girl and one boy, chosen randomly

   c.   Use of Texts: the same girl and boy observed in the Student Observation Form

General Data: At the top of each instrument there are spaces for information that you should fill in. Make sure you fill in this information as the instrument cannot be processed without it. This

information allows the proper geographical identification of the school and provides information that allows comparisons and analysis.

Common Data

1.   DO NOT write in the first three boxes

2.   School: write the name of the school. DO NOT fill in the two boxes on the right

3.   Department: write the name of the department. DO NOT fill in the two boxes on the right

4.   Municipality: write the name of the municipality. DO NOT fill in the two boxes to the right

5.   Observer: Write your name. DO NOT fill in the two boxes to the right

Specific Data

1.   Teacher: write the name of the teacher. Do not fill in the two boxes to the right

2.   Sex of Teacher: mark if the teacher is male or female

3.   Teacher is an oral bilingual: mark if the teacher speaks the mother tongue of the students. If the students speak two or more languages (without counting Spanish), mark Yes if the teacher speaks one of those languages

4.   BIE Classroom: indicate if the classroom has a teacher with a bilingual posting

5.   Grades (Teacher Observation) mark all the grades that the teacher teaches

6.   Grades (Use of Texts and Student Observation Form) indicate the grade of the student that you are observing

Specific Information for Each Instrument

1.   School Observation Guide: make sure to fill in ALL the lines of information. This instrument requires observation and an interview with the school director and/or the teachers to obtain inscription, drop-out and attendance data. Obtain this information for ALL grades.

2.	Materials Inventory: you should verify that the materials listed on the instrument exist in the school. Check in the storage room, the directors office, the library (if one exists) and each classroom. Mark all of the materials that exist.

3.	Teacher Observation Form: Make three observations before recess and three after recess, at intervals of 15-20 minutes. DON'T make observation one after another. If classes are suspended, DON'T make observations of students or of the use of texts. Mark ONLY ONE response in each category of observations. If you are unsure, mark the option that YOU feel is most appropriate.

4.	Student Observations: Make three observations before recess and three after recess, at intervals of 15-20 minutes. DON'T make observations one after the other. Observe one girls and one boy per classroom. You will make six observations of the same students. Note that there is a special form for preprimary classes. Mark ONLY ONE response in each category of observations. If you are unsure of the appropriate response, mark the option that YOU feel is most appropriate.

5.	Use of Texts: Make three observations before recess and three after recess, at intervals of 15-20 minutes. DON'T make observations one after another. Observe the same children that you observed previously. You will make six observations with the same students. Mark ONLY ONE response for each category of observations. If you feel unsure, mark the option that YOU feel is most appropriate.

General Instructions for Filling in the Forms

The forms will be read by an optical reader. For this reason, they must be filled in very carefully. Follow the following rules in filling in the forms:

1.	Use a black or dark blue pen or a 6B pencil. DDON'T use normal pencils

2.	Fill the circles carefully, without going outside the line. DON'T use an X or check marks or small dots in the circles

3.	When you are asked to write something use block letters. DON'T use script. Make sure your writing is Legible to someone else

4.	If you have to erase, erase completely. If the form is dirty or stained, transfer the information to another form. Do NOT use liquid paper – the scanner will see the white mark as a black mark.

5.   DO NOT break, staple or lose the marks in the corner of each page. If they are not clear, transfer the information to another form. The same rule applies to the code that appears on the bottom of the form.